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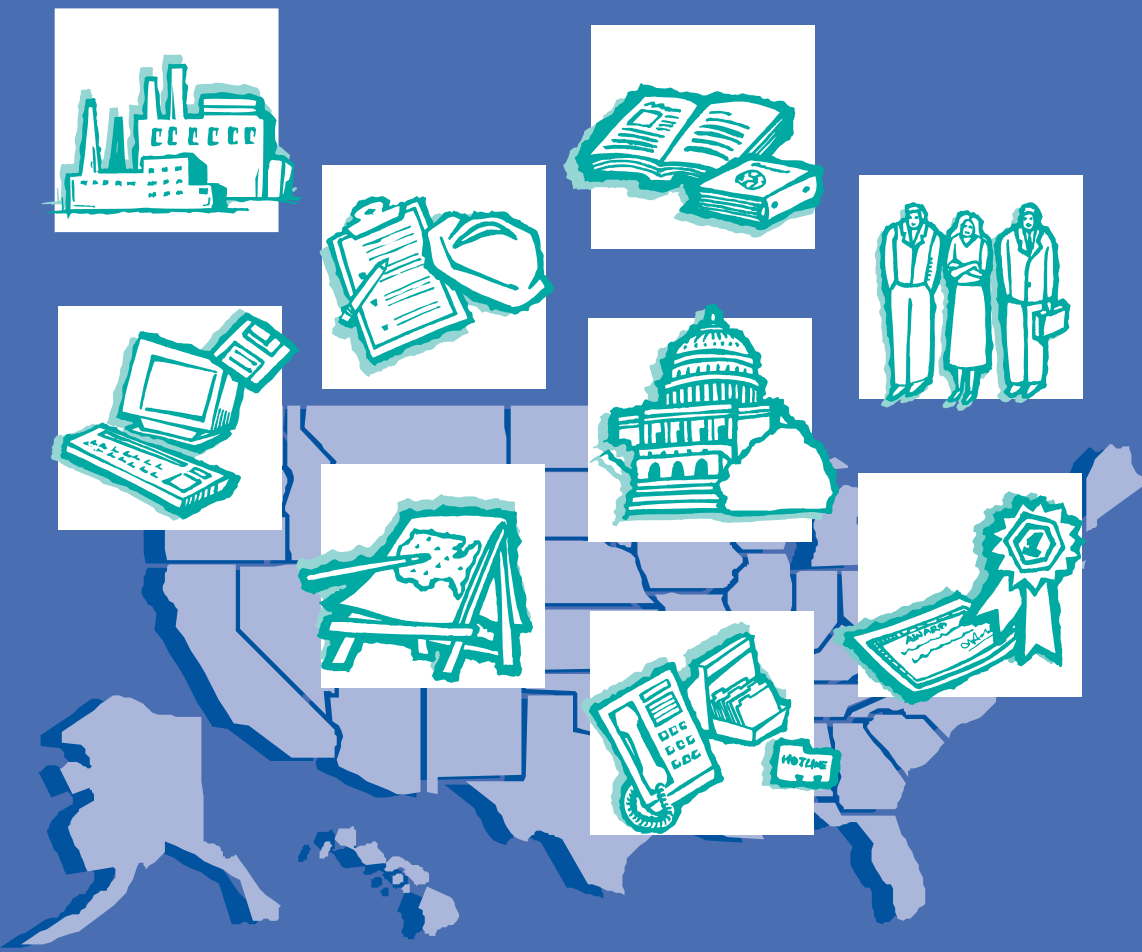
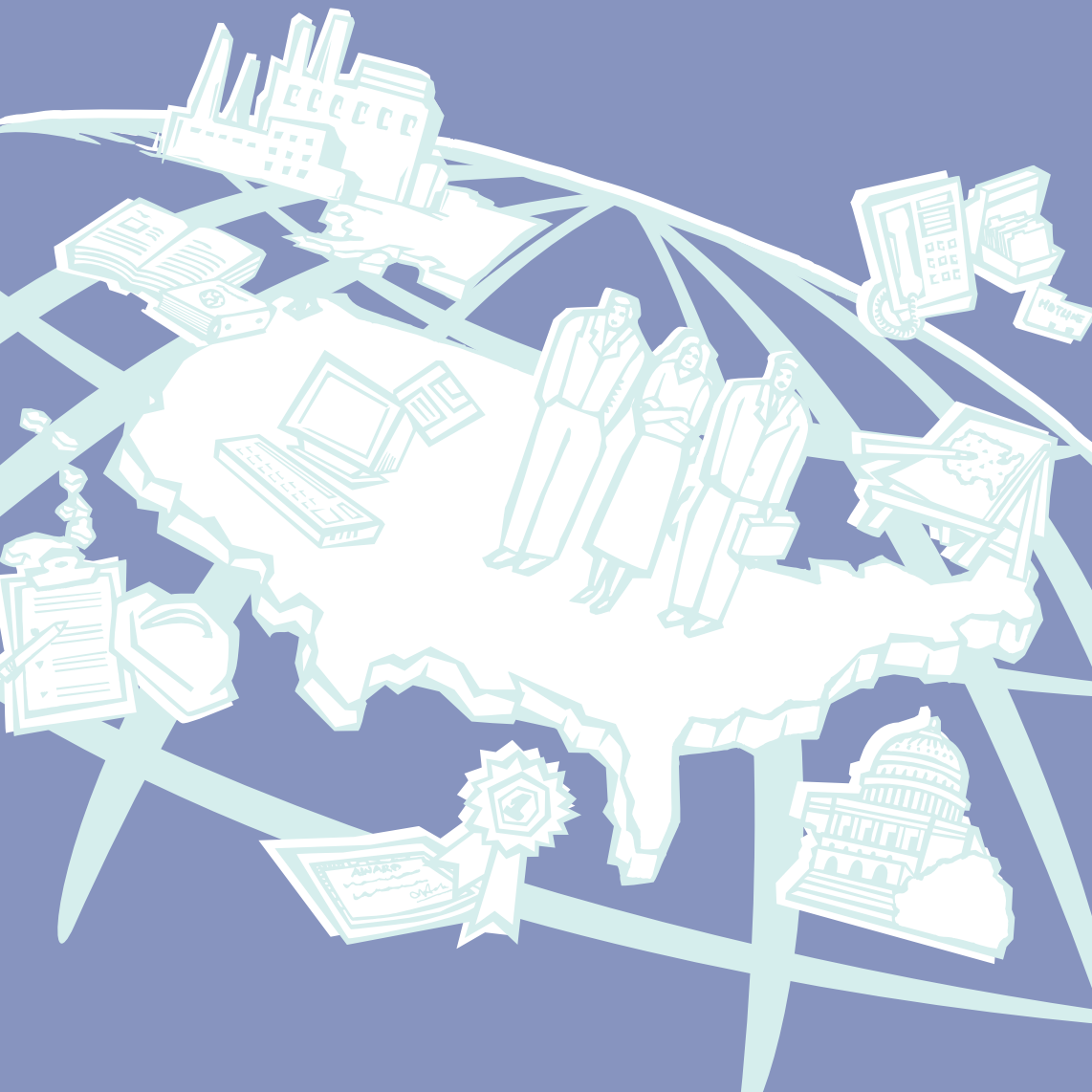
Office of Pollution Prevention and Toxics (7409)

Pollution Prevention Incentives for States (PPIS) Assessment Study

Executive Summary





Executive Summary

As an initial step in the Agency's long-term strategy to evaluate the Pollution Prevention Incentives for States (PPIS) grant program, the PPIS Assessment Study documents the full range of activities funded by the PPIS grant program during the first 5 years. All of the information presented in this report is based solely on interviews or materials prepared by the grantees themselves. This report does not attempt to compare or rate state programs, nor is the study designed to evaluate the effectiveness of specific activities funded by the grant. This report represents an accounting of how grantees used EPA funds to stimulate and enhance pollution prevention awareness and initiatives throughout the country. It attempts to answer the following questions:

- How are states using PPIS funding to support activities that promote pollution prevention?
- How are states combining regulatory and voluntary approaches towards pollution prevention?
- Do PPIS grants support the establishment of sustainable pollution prevention programs at the state level?

Key Findings

- **PPIS funds enabled grantees to implement a wide range of pollution prevention activities.** PPIS grant monies funded nearly 5,000 pollution prevention assessments, more than 850 workshops, and the development of 370 pollution prevention case studies. Such a breadth of activities illustrates the aggressive role states have assumed at the forefront of the pollution prevention movement.

- **States targeted priority industry sectors.** PPIS grantees' efforts reached companies in 35 targeted industry sectors, including automotive, printing, and dry-cleaning. Grantees commented that by focusing on high-priority industry sectors, they can target their efforts and resources most effectively. Many grantees believe that educating industry about stopping waste generation at its source is the key to pollution prevention. This finding supports conclusions made by the Office of Technology Assessment in its 1986 report, "Serious Reductions in Hazardous Waste." The diversity of projects implemented indicates that grantees addressed several different areas of need within their particular states, thereby fulfilling the intent of the 1990 Pollution Prevention Act.

- **PPIS provided direct economic benefits.** According to the grantees interviewed for this study, PPIS grants helped businesses operate more cost effectively. By showing businesses more efficient production technologies and encouraging them to use pollution prevention equipment as a way to proactively avoid compliance costs, state pollution prevention programs helped industry recognize the economic benefits of source reduction. In some cases, PPIS grantees' efforts achieved substantial cost savings for businesses. For example:

  — Businesses that received assistance from Kentucky Partners saved approximately $3 million annually by implementing pollution prevention measures.[1]

  — Florida's Waste Reduction Assistance Program (WRAP) has saved businesses $3.7 million.[2]

1 Kentucky Partners Fact Sheet, January 1994.

2 Pollution Prevention Incentives for States, Spring 1994, U.S. EPA.

— Companies receiving technical assistance from Alabama's Waste Reduction and Technology Transfer (WRATT) program saved an average of $160,000 each.[3]
— Iowa WRAP has helped businesses in Iowa save more than $1.5 million annually.[4]

- **PPIS grants produced environmental results**. In terms of environmental benefits, such as pollution avoided or waste reduced, some PPIS grantees measured significant results. Other grantees who were unable to measure results perceived environmental improvements. Sample benefits include:

  — Tennessee showed a decrease in toxic releases of up to 42 percent.[5]
  — West Virginia experienced a 53 percent decrease in toxic releases.[6]
  — Rhode Island's PPIS program reduced 3.4 million pounds of liquid waste and 20,000 pounds of solid waste.[7]

PPIS Grant Program

The PPIS grant program, mandated by the 1990 Pollution Prevention Act, funds states to develop and expand pollution prevention programs. EPA established the program with the philosophy that states should play a primary role in encouraging industry, small and medium-sized businesses, local governments, and the public to shift priorities from pollution control to pollution prevention. Because states have more direct contact with generators and hence are more aware of their needs and problems, EPA believes that state-based environmental programs can make a unique contribution to the national effort to promote source reduction. At the outset of the PPIS grant program, EPA established several goals, including empowering states to build pollution prevention programs, targeting technical assistance to those groups most in need, and fostering federal and state communication on pollution prevention results.

3 Alabama Pollution Prevention Program Final Progress Report, 1994, Alabama Department of Environmental Management.

4 Pollution Prevention Works for Iowa: Case Studies, April 1993, Iowa Department of Natural Resources.

5 Personal communication in May 1995 with George Smelcer, University of Tennessee Center for Industrial Services.

6 West Virginia Scorecard, 1992, National Institute for Chemical Studies.

7 Pollution Prevention in Rhode Island: Final Report on DEM's Pollution Prevention Program, June 1994, Rhode Island Department of Environmental Management.

Allocation of PPIS Grant Awards

From the inception of the grant program in 1989, EPA awarded approximately $24 million to 124 organizations through 1993. Grant recipients and other partners, such as local governments and industry, supplied more than $16 million in matching funds for a total funding amount of approximately $40 million for the 5-year period. Over the years, the number of grants EPA awarded increased substantially from 14 in 1989 to 52 in 1994, although the amount of each grant awarded decreased. Across the 5-year period, the level of funding across the 10 EPA Regions was fairly even, and all 50 states received some level of PPIS funding.

Over the 5-year period, PPIS funds were distributed to five categories of recipients, including:

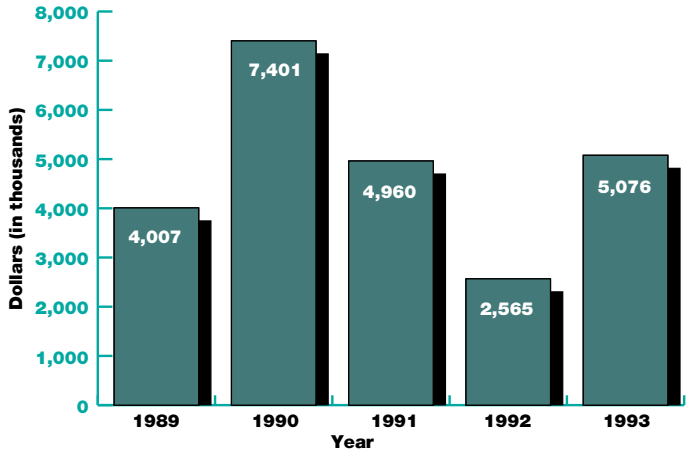
- State environmental/health agencies
- Other state agencies
- Universities
- Indian tribes
- Other groups, such as the New England Waste Management Officials Association (NEWMOA)

As depicted in Exhibit 1, state environmental and health agencies received the most funding; their 5-year total reaches close to $18 million, or 71 percent of all PPIS funds awarded during that time. Universities received the second greatest portion of grant monies (approximately $3 million, or 13 percent of total funds). Other state agencies received 7 percent of total funding, and Indian tribes and other organizations received 3 and 6 percent of PPIS grant funds, respectively.

EPA designed the pollution prevention program to concentrate early efforts on publicizing pollution prevention, believing that businesses would reduce waste voluntarily once they learned the benefits and cost savings associated with pollution prevention. Thus, voluntary programs that provide their services (e.g., technical assistance audits, training, and presentations) to industry and the public on an elective basis received the most funding. These programs accounted for 62 percent of PPIS funds awarded between 1989 and 1993. To provide incentives through regulatory mechanisms, states began requesting funding for regulatory integration programs (e.g., training regulatory staff, incorporating pollution prevention into permitting, enforcement, and compliance inspections) in later years. Toward the end of the 5-year period, and into 1994 and 1995, regulatory integration projects became more prevalent. One quarter of PPIS funds supported programs that contained both voluntary and regulatory elements. Given that most states use voluntary elements to some extent, strictly regulatory projects received only 4 percent of funding.

Exhibit 1

Total PPIS Funding by Year



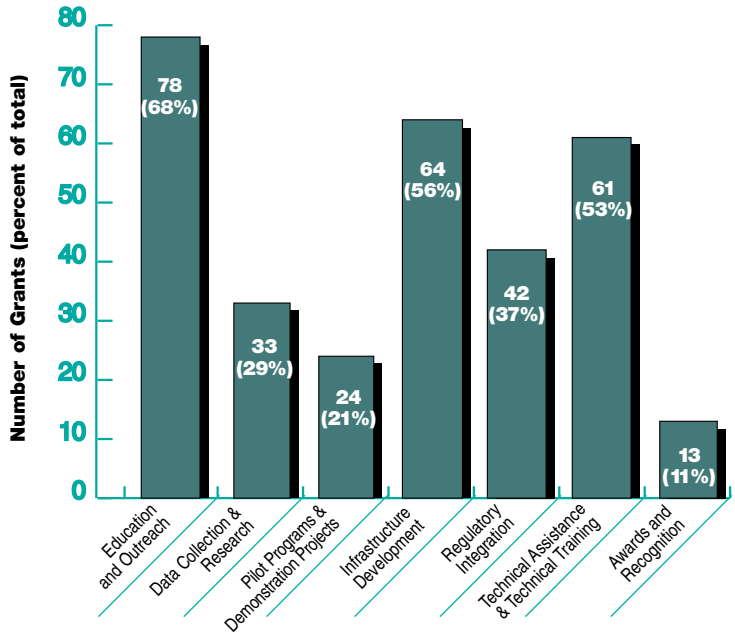
Activities Conducted by PPIS Grantees

Grant recipients implemented a variety of activities through PPIS funding. Activities ranged from voluntary projects, such as outreach and technical assistance, to regulatory initiatives, such as integrating pollution prevention into facility permits. Exhibit 2 shows the spectrum of activities conducted by PPIS grantees over the 5-year period.

- **Education and Outreach.** Designed to heighten public awareness of pollution prevention, these initiatives are implemented through a variety of projects. Grantees most frequently conducted workshops, seminars, and presentations. These activities educated participants on topics such as conducting pollution prevention audits, current hazardous

Exhibit 2

Summary of Activities



waste regulations, and cost savings achieved through pollution prevention. Education efforts frequently targeted specific audiences such as priority industry sectors, state environmental managers, or trade associations. Grantees also developed a large quantity of printed outreach materials such as case studies and fact sheets. These materials often documented the pollution prevention and cost savings successes of companies or provided general suggestions for how facilities can reduce waste at its source. Many state agencies have begun accessing the Internet to promote more effective communication with business and industry.

- **Data Collection and Research.** Grantees used PPIS funding for a variety of data collection and research initiatives to evaluate the usefulness of current pollution prevention methods and to learn more about new pollution prevention technologies. These efforts included researching alternative cleaning solvents, studying regulatory and policy initiatives to encourage source reduction, and analyzing TRI data from major industries.

- **Pilot Programs and Demonstration Projects.** Funding pilot and demonstration projects allowed EPA and the states to learn how new initiatives will work before businesses or the government invest a significant amount of time and resources. Some PPIS grants were used to fund either demonstration or pilot projects that tested innovative pollution prevention techniques, such as holistic farm planning, interagency coordination to avoid cross-media pollution transfer, and materials recovery from chemical processing.

- **Infrastructure.** A major goal of the PPIS grant program was to help states develop the infrastructure necessary to establish a sustainable pollution prevention program. Infrastructure includes time and resources spent on hiring and training staff, developing legislation and regulations that promote pollution prevention, evaluating program effectiveness, and securing funding for the program's future endeavors. In addition to developing pollution prevention legislation and policies, grantees used PPIS funds to hire 60 staff members, hire and train 70 interns, and provide 40 internal training sessions.

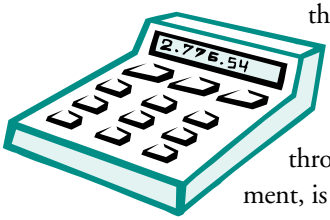
- **Regulatory Integration.** While strictly voluntary initiatives focusing on outreach and technical assistance characterized the activities of most earlier grantees, regulatory integration is a growing trend. Typical regulatory activities implemented by grantees during the 5-year period included incorporating pollution prevention reviews in permitting, inserting pollution prevention requirements into enforcement and compliance orders, developing pollution prevention checklists for inspectors, and providing pollution prevention training for regulatory staff. PPIS dollars helped to develop pollution prevention tools to assist inspectors, permit writers, and other regulatory staff to incorporate pollution prevention into their work.

- **Technical Assistance.** Grantees interviewed believe that through onsite visits, assessments, information dissemination, and training, state pollution prevention programs can help industry and other groups better understand and incorporate pollution prevention technologies into their everyday operations. Fifty percent of all grantees used PPIS funding to conduct onsite visits. These assessments generally took place outside the regulatory environment, and participation of businesses was strictly voluntary. Grantees believe that through the assessments, businesses learned how to save money, increase efficiency, and build a good public image.

- **Awards Programs.** Several PPIS grantees instituted awards programs to recognize outstanding pollution prevention achievements, usually by industry. The winners generally received free publicity for their efforts, and many programs have developed case studies based on the accomplishments of award winners. For example, Alaska's Green Star program has honored the pollution prevention efforts of companies such as Phillips Petroleum, ARCO Alaska, and the Pepsi-Cola Bottling Company. Vermont's PPIS-funded Governor's Awards program recognized IBM for its accomplishments, and New York State's program selected several major companies, such as Xerox Corp., to receive awards for pollution prevention.

Measurement and Evaluation of Activities

Traditionally, EPA monitors both the federal and state-delegated programs primarily by counting the number of activities underway. Media programs generally use indicators based on the regulatory structure, such as number of permits issued or number of compliance monitoring inspections, to ensure that targets are met. Unlike other federal environmental statutes such as the Clean Air Act or the Safe Drinking Water Act, the Pollution Prevention Act of 1990 did not establish a regulatory framework. Consequently, traditional Agency approaches to measurement cannot be easily applied to the PPIS program or to the pollution prevention program as a whole. Not only are there no administrative measures, such as permits or inspections, which typify regulatory programs; there is also no federal model by which to evaluate state pollution prevention programs. Documenting grant-funded activities through this report, including program evaluation and measurement, is EPA's first step in the evaluation of the PPIS grant program.



While many states are just beginning to evaluate elements of their pollution prevention programs, a few states (e.g., Alabama and Massachusetts) have successfully evaluated their programs. PPIS grantees used a variety of techniques to evaluate their programs, ranging from surveys to follow-up site visits. As a result, several states were able to gauge the level of satisfaction with particular services, and a few were able to quantify the results of their pollution prevention endeavors in terms of actual waste reductions and cost savings. Some state legislatures require the pollution prevention programs to report on activities conducted with state funding.

Generally, methods for measuring PPIS-funded programs fall into three categories:

- **Overall Evaluation**. Overall evaluations of program effectiveness enable state programs to assess the effectiveness of their entire pollution prevention program. Usually, state programs examine a range of data points such as level of client satisfaction, implementation rate of technical recommendations, and amount of pollution prevented. These

evaluations can help program managers to understand the effectiveness of different program elements and relationships among the program activities. They can be used to justify funding from state legislatures and help secure private funding by demonstrating effectiveness. One of the drawbacks of conducting overall evaluations is that they are often resource-intensive. For this reason, only a few PPIS grant recipients have conducted such an evaluation. Grantees that conducted overall program evaluations include Alabama, Massachusetts, and Erie County, New York.

- **Evaluation of Specific Services.** Some PPIS grantees targeted resources to evaluate priority services such as technical assistance or outreach. These evaluations are more limited in scope than overall evaluations and often focus on a single area of service delivery. This type of approach tends not to be as resource-intensive as a comprehensive evaluation. On the other hand, it does not provide the same level of detail and documentation as a comprehensive evaluation, particularly for cost savings or pollution reductions. Two common approaches to evaluating specific services are:

  — **Follow-up visits.** To evaluate technical assistance services, some grantees conducted spot assessments and follow-up visits to client companies. These onsite visits can provide valuable information about the implementation rate for a technical assistance program's pollution prevention recommendations, as well as specific data on waste reductions and cost savings.

  — **Surveys.** Grantees also evaluated the quality of technical assistance and other services such as workshops or training sessions by surveying clients. This approach enabled the grantee to assess whether or not priority services are perceived as useful and sometimes document cost savings and waste reduction. Program managers can use the results of the assessment to make changes in services to better meet client needs.

- **Measures of Activity Level.** The majority of state pollution prevention programs accounted for resources expended simply by tracking the level of activity of the program. This approach includes tracking the number and types of assessments completed, the size and types of

audiences at presentations, or the number of phone calls for assistance received. Some programs also tallied the number of newsletters written, facility-wide permits granted, grants disbursed, or case studies generated. For formal reporting to state legislatures, grantees also added narrative descriptions of accomplishments. Such an accounting of resources fulfilled legislative reporting requirements. Examining the quantities of services that a program provides is a relatively simple process that does not require the same level of energy or resources as an overall program evaluation or evaluation of specific services. Through the National Environmental Performance Partnership Systems (NEPPS) and the Performance Partnership Grants (PPGs), EPA is looking at new ways to evaluate environmental performance including focusing on measurement outcomes. This new model provides greater opportunities for seeing the impact pollution prevention is playing in advancing environmental protection.

Case Studies: Major Findings

EPA conducted an in-depth analysis of five states[8] to examine how these states integrated PPIS grants into state pollution prevention programs as a whole. EPA placed particular emphasis on determining the effectiveness of the grants in building infrastructure and self-sustaining programs. EPA evaluated the effectiveness of these grants in meeting the goals established at the outset of the grant program. These goals were:

- Empowering states to build a pollution prevention infrastructure.
- Learning from and building upon innovative means of implementing pollution prevention at both state and facility levels.
- Supporting states in establishing and expanding pollution prevention programs.
- Providing resources for pollution prevention technical assistance and training.
- Fostering federal and state information sharing and communication.

8 The states studied are Delaware, New Hampshire, New Jersey, North Carolina, and South Dakota.

Goal 1:

Building a Pollution Prevention Infrastructure

PPIS provided seed money to the states to develop sustainable pollution prevention programs. The five case study states used a variety of tools to institutionalize pollution prevention, including developing pollution prevention legislation and strategies, establishing advisory committees, designing information systems, and securing permanent funding.

- **Drafting Legislation.** New Jersey and Delaware helped craft pollution prevention legislation concurrent with their PPIS grant applications, which were later enacted by their state legislatures. The New Hampshire legislature is considering a bill to establish permanent funding for the pollution prevention program. While New Hampshire and South Dakota did not enact legislation, these states developed pollution prevention strategies consistent with EPA's waste management hierarchy to ensure the implementation of pollution prevention well into the future. The strategies in both states make it clear that pollution prevention is the highest priority of the state environmental agency and direct regulatory managers to design their programs to foster pollution prevention.

- **Establishing Advisory Committees.** Three of the case study states—Delaware, New Hampshire, and South Dakota—established a task force or advisory committee to guide the state's pollution prevention program. These committees have brought together representatives from state media programs and other state agencies. The committees continue to guide the development of the state pollution prevention program, foster communication between the media programs, and help institutionalize pollution prevention. In Delaware, the advisory committee includes other pollution prevention stakeholders, such as universities, utilities, local governments, and chambers of commerce. These meetings have created linkages between these different organizations interested in promoting pollution prevention, ensuring that pollution prevention activities continue long after PPIS funding ceases.

- **Securing Permanent Funding.** Since the outset of the program, PPIS has encouraged states to develop permanent sources of funding within

the state. Even though state legislatures across the country have begun cutting back funding for all nonmandated programs, the case study states demonstrate that they are making inroads to securing permanent funding. To receive the PPIS grant, each state secured matching funds of 100 percent (half the total cost of the grant) to support program activities. In addition, New Jersey and North Carolina both secured future funding from their state legislatures to continue program activities. Delaware currently provides funding for two staff in the pollution prevention program. In the future, the state plans to leverage additional resources by working with the NIST-funded Manufacturing Extension Partnership center in the state. New Hampshire currently has a bill pending in the state legislature to fund staff positions in the Department of Environmental Services. South Dakota is not currently seeking future funding. Rather, the state plans to focus on integrating its pollution prevention program into the regulatory structure, so that a special pollution prevention program would no longer be needed. The PPIS grants provide the needed flexibility to the states to design their programs in a way that reflect the characteristics and goals of the states.

Goal 2:

Implementing Innovative Approaches to Pollution Prevention

The case studies demonstrate the innovative approaches that PPIS grantees implemented to offer incentives to target groups to reduce waste, including voluntary challenges to business, grants, and recognition. The states also used innovative approaches to reduce barriers to preventing pollution, including those prompted by regulatory requirements, limited technical information, and research gaps. For example, Delaware established a voluntary challenge program, modelled on EPA's 33/50 program, to encourage industries to reduce the amount of toxic chemicals they emit. New Jersey instituted a Governor's Award Program to recognize the achievements of businesses that successfully reduce waste and other organizations and people that have furthered pollution prevention in the state. North Carolina offers challenge grants to industry to reduce waste.

Goal 3:

Establishing and Expanding Pollution Prevention Programs

Four of the five states studied—Delaware, New Hampshire, New Jersey, and South Dakota—had limited pollution prevention activities underway and no sustainable pollution prevention program in place prior to receiving PPIS funding. In all of these states, PPIS provided the seed money to establish pollution prevention programs.

North Carolina, one of the first states to establish a pollution prevention program, used PPIS funding to expand its program. PPIS funding enabled the state to better target pollution prevention technical assistance by developing an information management system that integrated all of the state's environmental databases. The funding also helped to expand technical assistance activities in conjunction with the media programs.

Goal 4:

Providing Resources for Technical Assistance and Training

All of the states highlighted in the case studies have provided onsite technical assistance to targeted groups to help them prevent pollution in innovative ways. For example, South Dakota is promoting better farmland and ranch management through the Bootstraps Project, which aims to teach farmers and ranchers about improving the environmental health of range and crop lands. Under Bootstraps, each family learns how to complete a natural resource inventory for their ranch or farm, develop a management plan, and select the best management practices to implement the plans. The state provides technical assistance to help Bootstraps participants select and implement their plans. In addition, Delaware targeted the printing industry as a high priority. The state developed a fact sheet to help printers reduce waste and offers site assessments to all printers in the state. New Hampshire conducted nearly 40 site assessments to offer businesses innovative solutions for reducing waste.

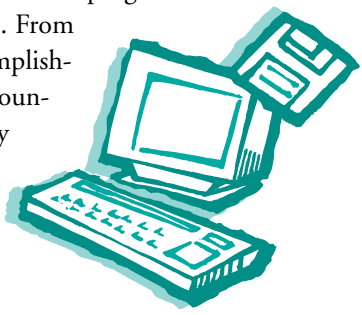
New Jersey's Department of Environmental Protection conducted more than 75 onsite technical assistance audits with PPIS funding. Including all funding sources, the New Jersey Technical Assistance Program (NJTAP) has assisted nearly 200 companies. While NJTAP responds to any business that requests services with either a phone call or an onsite visit, it also targets high-priority sectors in accordance with the state pollution prevention law. North Carolina identified appropriate small business categories and developed and distributed informational materials to targeted industries. During this process, North Carolina formulated training materials and identified future research needs for pollution prevention in small businesses.

Goal 5:

Fostering Information Sharing and Communication

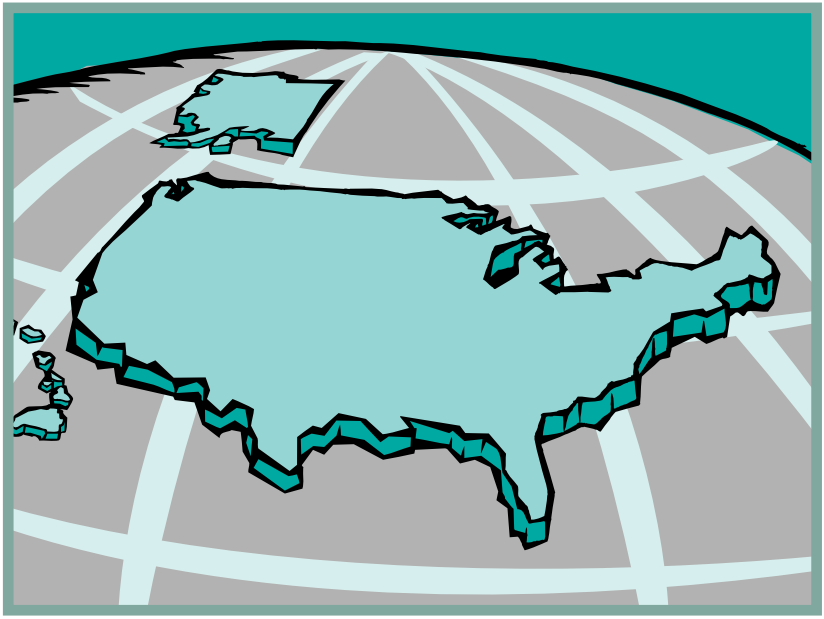
PPIS funding helped the case study states share information with each other and other states. Some of the case study states used their funding to communicate lessons learned from their demonstration program to other states. For example, New Jersey shared information on its facilitywide permitting project with Delaware as Delaware designed a similar project. In addition, as New Jersey formulated its technical assistance program, it consulted North Carolina for advice. Without PPIS funding, states would be operating in a vacuum. By sharing lessons learned, the states avoid duplication of effort, as well as save money, time, and other resources.

States shared information with EPA through a variety of vehicles, including semiannual progress reports, final grant reports, conferences, and publications. Together, the states featured in the case studies submitted more than 40 reports to EPA to document their progress implementing pollution prevention activities. From these reports EPA learns about grantee accomplishments, as well as what obstacles grantees encountered during implementation. EPA and many states are now accessing the Internet as a means to facilitate communication.



Conclusion

The case studies demonstrate that PPIS has achieved the initial objectives identified at the onset of the grant program. States are making efforts to build sustainable programs by writing legislation, developing pollution prevention strategies, securing independent funding, and incorporating the pollution prevention ethic throughout state governments. The states are providing innovative solutions to persistent pollution problems and providing direct technical assistance to small and medium-sized businesses, as stipulated by Congress. Furthermore, states have identified priority industry sectors and targeted technical assistance efforts to the groups most in need. Since the program's inception, states have been sharing information with each other and EPA. Prior to the PPIS grant program, very few organizations provided environmental assistance. Only a handful of states offered any kind of technical assistance. PPIS funding has dramatically increased the number of states offering outreach, training, and technical assistance, thereby providing businesses with the tools they need to improve their environmental performance.



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